Patients' Satisfaction with Delivered Food Services in Fayoum Hospitals

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Abstract

An appropriate nutritional care with adequate diet in hospitals helps patients to recover and enhance their quality of life. However patient satisfaction depends upon their perceptions of the quality of food they are served which in turn are affected by different factors. This study was conducted to assess the patients' satisfaction with the food hospital services in Fayoum city, Egypt and to determine factors affecting patient's satisfaction. A cross sectional study was conducted in four hospitals (teaching, public and two private hospitals) involving 415 patients. An interview questionnaire based on UK NHS for measuring patients satisfaction with food services. Our results revealed that there was positive correlation between patient's satisfaction and different aspects of food services with more satisfaction in the teaching hospital than the public or private hospitals. Logistic regression analysis revealed that taste, appearance of food, smell of the ward, and food variety were statistically significant determinants of satisfaction with hospital food services ($p < 0.05$). This study concluded that increasing the quality of food and hospital food services is more likely to increase the overall satisfaction level with food services in turn this could reduce the length of a patient's stay in the hospital and ultimately save money.

Keywords: *Patient Satisfaction; Hospital Food Services; Food Aspects; Fayoum Hospitals*

Abbreviations

ACHFPSQ: Acute Care Hospital Foodservice Patient Satisfaction Questionnaire; NHS: National Health Services; SPSS: Statistical Package for Social Science; OR: Odd's Ratio; RR: Relative Risk

Introduction

Hospital malnutrition is a common problem in various hospitals worldwide [1]. It increases the severity of the disease, and prolongs the period of stay and delays recovery. This makes it important not only for financial reasons but also for the psychological wellbeing of the patient. Nutritional promotion plays a vital role in faster recovery times, reduces hospital costs and improves patient satisfaction [2].

Food service is a basic essential part of patient rights. Adequate meal consumption is necessary to aid in patient recovery [3]. Nutritional care; safe and healthy food in hospitals encourages patients to eat, helps them to recover from their illness and enhances their quality of life [4].

Determining patient satisfaction is one way of measuring hospital service quality with the foodservice delivered in the hospital; one of the important items perceived by patients regarding health care services [5]. Foodservice quality is significantly correlated with overall patient satisfaction [6]. Therefore, many hospitals are changing foodservices delivery to be more patient focused as a way to enhance patient satisfaction and control costs [7].

Patient's perceptions of food services include multiple dimensions: quality of food, service timelines, attitude of the staff who serve food, menus to be variables, and considerate of different tastes. The perception of the food services quality depends on several different attributes, including freshness, meal taste, aroma, appearance, variety, flavor, the texture of food, and ability to choose a nutritious meal [8]. Meeting patient's food needs will decrease food wastage, and contribute in making to significant economic savings for this reason [1,2].

Aim of work

The aim of the study was to assess patients' satisfaction with the hospital food services in Fayoum city and analyse factors affecting satisfaction.

Subjects and Method

Study Design

A cross sectional analytical study was conducted between September and November 2015.

Study Setting

In Egypt, there are some developmental challenges related to poverty and illiteracy as 26.3% of Egyptians live below the poverty line, with high percentage of illiteracy rate 28% and significant inequalities between urban and rural areas. Fayoum is one of the 29 governorates of Egypt located in the north Upper Egypt with a total population of 2,511,027 according to the Egyptian census conducted in 2006. It is mainly an agricultural governorate with only one quarter of the population living in urban areas with the rest of the population lives in rural communities. Fayoum stands among the lowest ranking five governorates [9]. In Fayoum Governorate, many hospitals suffer from inappropriate meal service with decrease quality level of the provided food services in the hospitals. No research studies have been done on patients' satisfaction with food services provided in the governorate. The study was conducted in Fayoum governorate and included the following hospitals: general hospital, teaching hospital and two private hospitals.

Sampling Method

The patients were selected using stratified systematic random sampling method. First, the study stratified hospitals by ownership characteristics (governmental-private), and then randomly two hospitals from each stratum were selected. Second, two main departments' surgery and internal medicine were chosen as it was considered that patients probably stay longer than the other wards. Third to ensure the unity of the sample, the selection was made from patients with almost stable general conditions, not hinder them from food consumption, every third one was selected randomly through the current in-patient list of the selected hospital wards. The inclusion criteria were ability of the patient to assess the quality of food service with their voluntary informed acceptance to participate in the study. Participants were asked to answer the questionnaire at the point of delivery and were subsequently collected after finished it.

Sample Size

The sample size of 424 was determined using single population proportion formula based on a level of satisfaction of 50% with a confidence interval of 95% and a margin of error of 5%. A 10% non-response rate was added to the calculated sample size to be 448. In the end only 415 patients agreed to be interviewed and participated in the study based on teaching hospital 175, Fayoum general hospital 140 and two private hospitals 100 patients with an overall response rate of 92.6%.

Study Questionnaire

Data was collected using an interview questionnaire by two house officers. The questionnaire was adapted from the food elements of the questionnaire of the Acute Care Hospital Foodservice Patient Satisfaction Questionnaire (ACHFPSQ) with National Health Services (NHS) catering survey (Capra., *et al.* 2005). The (ACHFPSQ) is considered an accurate, reliable continuous tool to measure patient satisfaction of food service with comprehensive information related to the four categories of foodservice. A structured questionnaire based on

the ACHFPSQ was developed in English, translated into Arabic and was pre-tested. The questionnaire was divided into three main parts: the first part included the admission data as hospital name, type of the hospital whether public, private or teaching hospital, department (surgical or medical) and date of entry and duration of stay in the hospital, the second part collected socio-demographic data: age, sex, residence, educational status; occupation, monthly income, the third part addressed the patient's satisfaction with the different aspects of food services as follows: food services were covered by menu item descriptions relating to vegetarian and religious aspects; the serving of food at an appropriate time. Meal characteristics as: adequate amount, variety of food served, possibility of presence of a favorite food, substitution of a meal if missed; the availability of food and drinks when needed. Evaluation of food: type, form of food, food settlement, temperature, taste, presentation. Food staffs were tidy, polite and helpful. The physical environment was covered by good odour and no noise during serving or collecting food trays of food, and finally the overall patient's perception of the quality of food services in the hospital.

Patients were required to respond to the questions using a scoring system (2: Yes, 1: No, and 0: uncertain) with a total of 24. In case of reversed questions. For example, the question "Did you feel hungry after finishing your meal?" would be scored: (1: Yes, 2: No, and 0: uncertain). For comparison purposes, yes responses were pooled into the satisfied category bad and uncertain responses were pooled into another category "dissatisfied. The five points Likert Scale (1: excellent, 2: good, 3: acceptable, 4: bad, 5: uncertain) was used to rank the questions about (the taste, temperature, appearance and cooking) of food, overall patient satisfaction of catering service and all hospital service. For comparison purposes, excellent, good and acceptable responses were pooled into the same category "satisfied", bad and uncertain responses were pooled into another category "dissatisfied. Both were given the following scores (Satisfied = 2, and dissatisfied = 1) with a total of 6. The mean score was used as the cut off point for defining good or poor level of satisfaction. Participant equal to the mean score or above was considered to be satisfied while below the mean score was considered to be dissatisfied.

A pilot study was undertaken to test the validity of the questionnaire prior to its implementation on three stages. First, an informal pilot was done on the two interviewers to test the questions sounded right, and were logically sequenced, and flowed properly with no mistake in reading or misunderstanding of the questions. Second both interviewers surveyed ten patients to test the clarity and simplicity of the questions and the appropriateness of the wording to the patient's culture, and time needed to complete the questionnaire. Then modifications and reformation were made to some of the questions based on the pilot results to ensure they would not be confusing to the participants. Finally, the questionnaire was reviewed by three experts from the Faculty of Tourism and Hotels at Fayoum University for the content validity of the questionnaire.

Data Analysis

The data were analyzed by using Statistical Package for Social Science (SPSS for Windows, version 21). Descriptive statistics were used to summarize the socio-demographic characteristics of the patients, satisfaction levels, and quality of food services. Bivariate analyses (primarily chi-square test) were used to determine the relationship between each socio-demographic characteristic of the patients (gender, age, education level, occupation, type of food consumed, prior hospital admission, type of hospital, length of stay) and overall satisfaction with hospital food and food services. A probability level of 0.05 was used to determine if there was a statistically significant relationship between variables. The relationship between overall satisfaction and the aspects attached to food and food services was examined using Spearman correlation, and it was hypothesized that the relationship between the variables was statistically significant at the probability level of 0.05.

Multiple logistic regression analysis was performed to see the most important predictors of satisfaction with food services when the effects of all relative variables were taken into account. Then independent variables were regressed on dependent variable that was satisfaction (1 dissatisfied, 2 satisfied). Relative risk/odds ratio (OR) and confidence interval (95%) were estimated for each independent variable. Based on the results of regression model, satisfied and dissatisfied patients were compared, and it was assumed that reference categories in the regression model had the value of 1.0 relative risk (RR).

Results

The total number of the studied patients was 415 patients from the four hospitals teaching, public and private hospitals (N = 175, 140 and 100) patients with 42.2%, 33.7% and 24.1% respectively. Age was divided into three categories below or equal to 30 years old and from more than 30 to 50 years and above 50 years old (N = 132,193,90) 31.8%, 46.5%,21.7% respectively. The males patients were 228 (54.9%) of the patients and 187 (45.1%) were females. 281 (67.7%) of the patients lived in a rural area and 134 (32.3%) lived in an urban areas.

As regards educational level 154 (37.1%) had undertaken primary or preparatory level of education whereas 170 (41.0%) had attended secondary level education and 91 (21.9%) had attended university level education. Regarding working and monthly income there were 171 (41.2%) of the patients were not working, 169 (40.7%) were working as an employee and just 75 (18.1%) were involved in technical professional work. 235 (56.6%) of the patients said that his/her income was enough, 132 (31.8%) said that it was not enough and only 48 (11.6%) said that his/her income was enough and that s/he could save some of it.

The overall level of satisfaction was 55.9%. Table 1 showed that there were a statistical significant difference between patients satisfaction with food services regarding some socio-demographic characteristics as gender males were more satisfied than females (P = 0.008), occupation as 68.9% of patients who work as worker were satisfied with the food services (P = 0.043), and also the hospital type as regards the teaching hospital 54.3% of the patients were more satisfied about food services than public or private hospitals (P = 0.000).

Variables	Satisfied		Unsatisfied/Neutral		P value
	N = 281	%	N = 134	%	
Age					
≤ 30	76	57.6	56	42.4	0.343
> 30 - 50	101	52.3	92	47.7	
> 50	55	61.1	35	38.9	
Gender					
Male	140	61.4	88	38.6	0.008*
Female	92	49.2	95	50.8	
Residency					
Urban	74	55.2	60	44.8	0.465
Rural	158	56.2	123	43.8	
Education					
Primary and Preparatory	61	39.6	93	60.4	0.307
Secondary school	79	46.5	91	53.5	
University	43	45.3	52	54.7	
Occupation					
Not work	84	49.1	87	50.9	0.043*
Worker	40	68.9	18	31.1	
Employee	67	60.4	44	39.6	
Professional work	41	54.7	34	45.3	
Income					
Enough and spared	27	56.3	21	43.7	0.080
Enough	121	51.5	114	48.5	
Not enough	84	63.6	48	36.4	

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Length of hospital stay					
< 1 week	111	50.9	107	49.1	0.064
1 - 2 weeks	90	59.6	61	40.4	
2 - 4 weeks	31	67.4	15	32.6	
Hospital type					
Teaching hospital	95	54.3	80	45.7	0.000*
Public hospital	61	43.6	79	56.4	
Private hospital	76	76	24	24.0	

Table 1: Patient's satisfaction with hospital food services regarding socio-demographic characteristics.

More than three quarter of the patients 78.8% were pleased with overall quality of food services in the hospital. The most two items pleased the patients were the suitable meal time and the amount of food served 81.7% and 75.7% respectively; followed by the availability of help during eating 69.9%. On the other hand, the least item patients were un-pleased with unfriendly of food service staff as stated by 68.2% of patients followed by the unavailability of vegetarian food as stated by 68.9%. There was a statistical significant difference in patients satisfaction between the three types hospitals (P = 0.000), regarding the availability of menu, variety of food in (lunch, breakfast and dinner), (Table 2).

Variable	Percent of patients perception			P value
	Teaching hospital	Public hospital	Private hospital	
Patient offered a menu	27.4	35.0	70.0	0.000*
Presence of breakfast varieties	58.3	37.1	62.0	0.000*
Presence of lunch varieties	81.1	45.7	73.0	0.000*
Presence of dinner varieties	58.9	40.7	54.0	0.005*
Suitable meal times	78.9	82.9	85.0	0.407
The smell of the ward is acceptable	61.1	50.0	64.0	0.053
Food staffs are friendly & helpful	77.7	81.4	88.0	0.108
Availability of help during eating	64.0	75.0	73.0	0.079
Availability of replacement meal if missed	46.9	34.5	41.0	0.088
Amount of food is enough	72.6	77.5	80.0	0.335
Noise during collecting dishes	66.9	73.6	63.0	0.196
Well cooked food	66.9	66.4	79.0	0.065
Understandable menu	28.0	35.0	69.0	0.000*
Taste of the food	96.0	94.3	99	0.173
Food temperature	93.1	93.6	98	0.203
Food appearance	94.9	90.7	99	0.021*
Good catering services	92.6	94.3	98.0	0.166
Patient satisfaction	94.9	95.0	97.0	0.686

Table 2: Comparison between hospitals regarding patient's perception about different aspects of food services.

Figure 1 displayed that the percentage of satisfaction was high among the teaching hospital patients (44.5%) followed by the public hospital (40.4%) and the least percentage was among the private hospitals patients (15.1%).
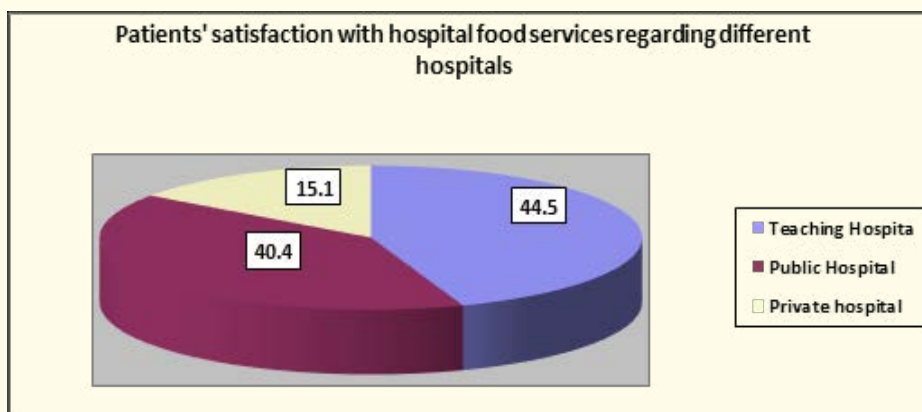

Figure 1: *Patients' satisfaction with hospital food services regarding different hospitals.*

Spearman correlation coefficients between the variables of overall satisfaction and different aspects attached to foods and hospital food services showed that all correlation coefficients were statistically significant. These results suggest that increasing the quality of these aspects of foods and hospital food services increases the level of overall satisfaction with foods and food services. According to the results, the variables that had the strongest relationship with overall satisfaction were the catering service ($r = 0.637$, $p < 0.01$), the variety of foods in lunch ($r = 0.563$, $p < 0.01$), understandable menu ($r = 0.540$, $p < 0.01$), the variety of foods in breakfast ($r = 0.536$, $p < 0.01$), taste of the food ($r = 0.487$, $p < 0.01$), the acceptability of ward smell ($r = 0.484$, $p < 0.01$), cooking of the food ($r = 0.481$, $p < 0.01$), the variety of foods in dinner ($r = 0.468$, $p < 0.01$), and lastly the availability of menu ($r = 0.453$, $p < 0.01$) (Table 3).

Variables	R
Patient offered a menu	0.453
Patient offered meals he likes to eat	0.455
The menu easy to understand	0.540
Presence of breakfast variety	0.536
Presence of lunch variety	0.563
Presence of dinner variety	0.468
Enough choice of food suit religious beliefs	0.388
Enough choice of food for vegetarian	0.233
Suitable meal times	0.298
Smell of the ward is acceptable	0.484
Food staffs are friendly and helpful	0.242
Availability of help during eating	0.360
Taking food from daily menu	0.296
Availability of drink or snack when needed	0.349
Availability of replaced meal if missed	0.389
Amount of food is enough	0.324

Feel hungry after finish the meal	0.156
Noise of during collecting dishes	0.378
Taste of the food	0.487
Temperature of food	0.436
Appearance of meals	0.391
Cooking of food	0.481
The catering service	0.637

Table 3: *Correlation between patients satisfaction with the hospital food services.*

Multiple logistic regression was done to find the most important determinants of satisfaction level with hospital food services, the results suggested that the variables of taste, temperature and appearance of food, catering service, smell of the ward, understandable menu, variety in (breakfast, Lunch, dinner), and choosing of preferred food, all aspects attached to hospital food services were statistically significant determinants of satisfaction. The model statistics showed a good estimation power and goodness of fit (Hosmer–Lemeshow goodness-of-fit test −2 log likelihood = 417.114[a], p = 0.774) (Table 4).

Variable	B coefficient	SE	Sig	Odds ratio	Satisfactory	
					Lower	Upper
Patient offered a menu	0.670	0.396	0.091	1.954	0.899	4.250
Patient offered meals he likes to eat	2.148	0.251	0.000	8.572	5.243	14.015
The menu easy to understand	1.308	0.401	0.001	3.699	1.687	8.113
Taste of food			0.000			
Excellent						
Good	-1.202	0.371	0.001	0.301	0.145	0.622
Satisfactory	-2.490	0.395	0.000	0.083	0.038	0.180
Temperature of food			0.000			
Excellent			0.000			
Good	-.233	0.357	0.514	0.792	0.393	1.595
Satisfactory	-1.464	0.373	0.000	0.231	0.111	0.480
Appearance of meals			0.000			
Excellent						
Good	-1.678	0.454	0.000	0.187	0.077	0.455
Satisfactory	-2.811	0.466	0.000	0.060	0.024	0.150
Cooking of food						
Excellent						
Good	-1.402	0.404	0.001	0.246	0.112	0.543
Satisfactory	-2.246	0.431	0.000	0.106	0.045	0.246
The catering service						
Excellent			0.000			
Good	-1.066	0.338	0.002	0.344	0.177	0.669

Satisfactory	-1.949	0.358	0.000	0.142	0.071	0.287
Presence of breakfast varieties	-2.100	0.226	0.000	0.122	5.244	0.191
Presence of lunch varieties	2.167	0.244	0.000	8.728	5.410	14.083
Presence of dinner varieties	1.442	0.211	0.000	4.231	2.799	6.396
Acceptability of ward smell	2.117	0.359	0.000	8.307	8.307	4.107
Gender (female)	0.496	0.200	0.013	1.643	1.111	2.430
Occupation			0.777			
No work						
Work	0.527	0.523	0.313	1.694	0.608	4.720
Employee	0.186	0.439	0.671	1.205	0.510	2.846
Professional work	0.097	0.514	0.851	1.102	0.402	3.019
Hospital type			0.000			
Public hospital						
Teaching hospital	0.430	0.228	0.059	1.538	0.983	2.405
Private hospital	1.411	0.290	0.000	4.101	2.325	7.235
Constant	-41.882					

Table 4: *Logistic regression analysis for the variables associated with patient satisfaction.*

Chi-square = 4.051; P = 0.000. Cox and Snell R2 = 0.307. Hosmer-Lemehow test = 8.459, P = 0.390

Discussion

The aim of this study was to identify the factors that influenced patient satisfaction with hospital foodservice during their hospitalization. Meals offered to patients inside the hospital are a part of their overall plan for recovery; the food provided should be safe and healthy and in an optimum quantity and quality. Regarding the socio-demographic characteristics of the studied patients, the result of this study showed that the patient specific characteristics such as gender, occupation, hospital type were significant variables affecting overall patient satisfaction (Table 1). These findings disagree with the result of a study done by [2] but both agree about presence of a negative relationship between length of stay and overall satisfaction with hospital food and food services, satisfaction was associated with short hospital stay (less than one week) 52.5% compared to only 11.1% of patients who had stayed longer patients (i.e. 2 - 3 weeks) were satisfied This can be explained by the fact that patients' satisfaction with food service changed over the course of their stay. However, studies done by [8,10] found no significant difference between patient satisfactions based on length of stay.

Satisfaction was higher among male patients 60.3% compared with female patients 39.7% (Table 1) which is logical as the females tends to be more expert in cooking and less likely to be satisfied with the food services.

According to the results, about 40.9% of satisfied patients were from a teaching hospital compared to 26.3% of satisfied patients were from a public hospital (Table 1). This could be explained by continuous quality improvement; the nutrition supervision done by the health staff and financial support from the University to the services in the teaching hospital comparing to the public hospital which suffers from lack of resources and limited budget.

By looking at the effect of age on satisfaction the results showed that 38.9% of older patients aged more than 50 years were dissatisfied compared with 42.4% of younger patients aged ≤ 30 years indicating positive relationship between foodservice satisfaction and age (Table 1). This might be explained by tendency of old age people to be inconsistent when making decisions. This agrees with the findings of [8]. In contrast, another study conducted in China by [11] has concluded that increasing age had been a negative predictor of patient satisfaction.

In addition, the study showed that there was a positive relationship between the foodservice satisfaction and the respondents' income. The patients with low income were more satisfied than others with high income [2]. However, in a study done by [12] found that low monthly income of patients was significantly associated with higher level of satisfaction, this may make patients satisfied with any services that they were provided, similar result were reported by [13]. This finding also agrees with [2] who found that patients with high income were more satisfied than others with low income.

The results revealed that 76% of private hospitals inpatients were satisfied with catering service and the majority of the patients in the hospitals were pleased with the quality and the variety of the lunch meal, suitability of meal time, amount, taste, temperature and appearance of food this made them judge positively the behaviour of the food service personnel in the hospitals (Table 2). Improving patient satisfaction is linked with satisfied employees [7]. As employees find purpose and meaning in their work, they are motivated to see how their actions contribute to better patient care.

Spearman correlation coefficients between the variables of overall satisfaction and different aspects attached to foods and hospital food services showed that variables that had the strongest relationship with overall satisfaction were (r = 0.563, p < 0.01), understandable menu (r = 0.540, p < 0.01), the variety of foods in breakfast (r = 0.536, p < 0.01), the good smell of food (r = 0.484, p < 0.01), the variety of foods in dinner (r = 0.468, p < 0.01), food appearance (r = 0.453, p < 0.01) and lastly the availability of menu (r = 0.453, p < 0.01) (Table 3). These results suggest that success on those specific items may raise overall patient satisfaction scores. Most of the above items are related to food quality and meal service quality.

Multiple logistic regression was run to find the most important determinants of satisfaction level with food and hospital food services, The results suggested that offering of food menu would not be significant predictors in estimating satisfaction of the patients, and the variables of taste, appearance, smell of the ward, understandable menu' variety in (breakfast, Lunch, and dinner) and choosing of the preferable food were statistically significant determinants of satisfaction with foods and hospital food services (Table 4). In other words, if the hospital provides variety of food in (lunch, dinner, breakfast) with a good aroma in a good manner, but without worsening the nutritious level, patients are more likely to be overall satisfied with food and hospital food services. These findings disagree with the findings done by [2]. Another finding were revealed by [12] found that low monthly income persons, taste and temperature of food, attitude of staff serving food were statistically significant independent variables related to patient satisfaction with hospital food and food services.

Conclusions and Recommendations

The results concluded that increasing the quality of foods and hospital food services are more likely to increase the level of overall patient satisfaction with foods and food services especially in the aspects related to variety of food, taste, appearance, way of cooking and. This means that food issues have a stronger impact on overall patient satisfaction than the personal relationship issues. Also, patient satisfaction decreases with increase the length of hospital stay and increases with older ages. Assessment of patient foodservice satisfaction should be done on regular basis for continuous improvement.

It is highly recommended that each hospital has establishes a food service system that delivers food that meets patient expectations with improvements in the aspects of presence of menu with variable food types, good appearance and aroma of the food with consideration of patient preferences as well as nutritional needs. Assessing patient foodservice satisfaction should be done on regular basis by a questionnaire on the back of the patient menu for continuous improvement and hiring highly-skilled food service staffs who know how to communicate with patients. Dieticians should have an obvious role in patient food by meetings with patients to know patient preferences and include them in menu planning and educating about the different healthy food suitable for their condition.

Limitation of the Study

The big limitation of the study was the small size of the sample. The questionnaires were filled out for inpatients who had received at least three meals, who didn't eat any external food beside the hospital food and who weren't severely ill. This limited the inpatients

who qualified for the study. In Fayoum city there's only one public hospital and one teaching hospital that were included in the study. Regarding the private hospitals, the approval was obtained from only two hospitals that were included in the study. During piloting, the questionnaire was self- administrated handed out to 50 inpatients (10% of the sample) but the respondent rate was 21%. For this reason, the questionnaire changed into interview the inpatients by aid of two house-officers, which had more time and lessened the sample size.

Key Points

This is the first study to assess the patients' satisfaction with the hospital foodservice in Fayoum city. Therefore, this study will provide useful direction for those who want to do further studies on hospital foodservice. It also gave some figures that reflected how the foodservice provided in Fayoum hospitals. Findings from this study will assist the stake holders to determine the trends in foodservice satisfaction and identify areas to target for quality improvement initiatives to discover and identify the defects in the provided service and try to improve it.

Bibliography

1. Johansen N., *et al.* "Effect of nutritional support on clinical outcome in patients at nutritional risk". *Clinical Nutrition* 23.4 (2004): 539-550.

2. Sahin B., *et al.* "Factors affecting satisfaction level with the food services in a military hospital". *Journal of Medical Systems* 30.5 (2006): 381-387.

3. Hartwell HJ., *et al.* "Foodservice in hospital: Development of a theoretical model for patient experience and satisfaction using one hospital in the UK National Health Service as a case study". *Journal of Foodservice* 17.5-6 (2006): 226-238.

4. Fatemeh A., *et al.* "The Quality of Food Services through Three Various Methods among Selected Hospitals Affiliated to Tehran University of Medical Sciences, Based on the Servqual Model". *Journal of Health Policy and Sustainable Health* 1.4 (2014): 115-120.

5. Dall'Oglio I., *et al.* "A systematic review of hospital foodservice patient satisfaction studies". *Journal of the Academy of Nutrition and Dietetics* 115.4 (2015): 567-584.

6. Sheehan SL. "Key facilitators and best practices of hotel-style room service in hospitals". *Journal of the American Dietetic Association* 106.4 (2006): 581-586.

7. Theurer Vanessa A. "Improving Patient Satisfaction in a Hospital Foodservice System Using Low-Cost Interventions: Determining Whether a Room Service System is the Next Step". All Graduate Plan B and other Reports. Paper 32 (2011).

8. Wright O., *et al.* "A comparison of two measures of hospital foodservice satisfaction". *Australian Health Review* 26.1 (2003): 70-75.

9. El-Tawila S., *et al.* "Income Poverty and Inequality in Egypt's Poorest Villages". The World Bank and Social Contract Center, Experts' Group Meeting, Cairo, Egypt (2013).

10. Fallon A., *et al.* "Use of the Acute Care Hospital Foodservice Patient Satisfaction Questionnaire to monitor trends in patient satisfaction with foodservice at an acute care private hospital". *Nutrition and Dietetics* 65.1 (2008): 41-46.

11. Dayasiri MBKC and Lekamge ELS. "Predictors of patient satisfaction with quality of health care in Asian hospitals". *Australasian Medical Journal* 3.11 (2010): 739-744.

12. Abdelhafez AM., *et al.* "Analysis of Factors Affecting the Satisfaction Levels of Patients Toward Food Services at General Hospitals in Makkah, Saudi Arabia". *American Journal of Medicine and Medical Sciences* 2.6 (2012): 123-130.

13. Watters C., *et al.* "Exploring patient satisfaction with foodservice through focus groups and meal rounds". *Journal of the American Dietetic Association* 103.10 (2003): 1347-1349.

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